

HOMICIDE-SUICIDE

Characteristics of homicide followed by suicide incidents in multiple states, 2003–04

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Objective: To calculate the prevalence of homicide followed by suicide (homicide/suicide) and provide contextual information on the incidents and demographic information about the individuals involved using data from a surveillance system that is uniquely equipped to study homicide/suicide.

Methods: Data are from the National Violent Death Reporting System (NVDRS). This active state-based surveillance system includes data from seven states for 2003 and 13 states for 2004. The incident-level structure facilitates identification of homicide/suicide incidents.

Results: Within participating states, 65 homicide/suicide incidents (homicide rate = 0.230/100 000) occurred in 2003 and 144 incidents (homicide rate = 0.238/100 000) occurred in 2004. Most victims (58%) were a current or former intimate partner of the perpetrator. Among all male perpetrators of intimate partner homicide 30.6% were also suicides. A substantial proportion of the victims (13.7%) were the children of the perpetrator. Overall, most victims (74.6%) were female and most perpetrators were male (91.9%). A recent history of legal problems (25.3%), or financial problems (9.3%) was common among the perpetrators.

Conclusions: The results support earlier research documenting the importance of intimate partner violence (IPV) and situational stressors on homicide/suicide. These results suggest that efforts to provide assistance to families in crisis and enhance the safety of IPV victims are needed to reduce risk for homicide/suicide. The consistency of the results from the NVDRS with those from past studies and the comprehensive information available in the NVDRS highlight the promise of this system for studying homicide/suicide incidents and for evaluating the impact of prevention policies and programs.

Homicide followed by suicide is a relatively rare lethal incident in which an individual kills another and subsequently dies by suicide, usually shortly after the homicide.¹ Past studies of homicide/suicide have estimated rates of occurrence in the US to be between 0.2–0.38 per 100 000 persons annually.^{2–5} Despite this low rate of occurrence, homicide/suicide incidents have a significant impact on the children, families, and communities of the victims and perpetrators.⁶ This study describes characteristics of perpetrators and victims of homicide/suicide, including nature of the relationship, location of the incident, history of alcohol or drug use, and interpersonal violence.

Homicide/suicide incidents usually include one victim and one perpetrator.¹ In a majority of homicide/suicide incidents, the homicide perpetrator is male, older than the victim, and is likely to be white.^{5–7} A history of depression and/or mental illness is also common among perpetrators.^{5–8} Victims of these incidents are more likely to be women who have separated or are divorced from their partners.^{8–9}

Homicide/suicide incidents involving strangers are rare.⁸ In previous studies of homicide/suicide incidents, more than 95% of the perpetrators were known to the victims.¹⁰ Most often, the perpetrator was a former or current husband or other intimate partner with the homicide taking place in the home of the victim.⁹ The authors of a recent study of homicide/suicide incidents in China were able to identify an intimate relationship between the perpetrator and victim in 95% of the incidents.¹¹ When comparing homicide/suicide incidents to homicides, research has suggested that the perpetrator is more likely to die by suicide when the motive is related to possessiveness/jealousy, sickness, or stress and these incidents are more likely to be premeditated than a homicide alone.¹²

Alcohol or drug use is a common risk factor in homicides, independent of the suicide of the perpetrator.¹³ However, the role of alcohol or drug use in homicide/suicide incidents is less clear as this information is not always available. In a review of factors associated with perpetration of a homicide followed by suicide where toxicological information was available, 34% of the perpetrators had detectible blood alcohol content during postmortem exams and other substances were identifiable in 18% of that same group.⁶ Male perpetrators are also more likely than victims to be under the influence of alcohol at the time of the incident.¹⁴

The majority of deaths associated with homicide/suicide incidents in the US involve a gun, with handguns being used most frequently.^{3–14–15} Other weapons associated with homicide/suicide incidents include knives, blunt objects, and motor vehicles; other methods of homicide have included strangling/asphyxiation, poisoning, and physical assault.¹¹

Approximately one quarter of homicide/suicide incidents involve persons over the age of 55.¹⁶ While males remain the most likely perpetrators in this age group, as many as 50% of male perpetrators identified in a study of homicide/suicide among the elderly identified the husband as the main caregiver in the relationship.¹⁷ Recently, a comparison of homicide/suicide and suicides found that perpetrators of homicide/suicide over the age of 55 were more likely than those who died by suicide to have reported a recent illness, to have provided care for another, and to have a history of domestic violence.¹⁸

This study considers the association between these characteristics and perpetration or victimization in homicide/

Abbreviations: IPV, intimate partner violence; MSA, metropolitan statistical area; NVDRS, National Violent Death Reporting System.

suicide incidents using data from the National Violent Death Reporting System (NVDRS) for the years 2003 and 2004. The demographic characteristics for both victims and perpetrators are compared and the association between homicide/suicide incidents and risk factors is considered using the detailed contextual and personal data available in the NVDRS.

DATA

The NVDRS is an active state based surveillance system that provides a census of resident and violent deaths that occur within the US. Six states (Maryland, Massachusetts, New Jersey, Oregon, South Carolina, and Virginia) contributed data in 2003 and an additional seven states (Alaska, Colorado, Georgia, North Carolina, Oklahoma, Rhode Island, and Wisconsin) began contributing data in 2004. A violent death is defined as a death resulting from the intentional use of any means to injure or poison oneself, another person, or group of people. Included in the NVDRS, therefore, are all homicides, suicides, and legal intervention deaths, excluding legal executions and acts of war. The NVDRS also includes unintentional firearm related deaths, and deaths of undetermined intent occurring within the US to assess misclassification. The NVDRS captures data in a relational database that includes victims (deceased persons), alleged perpetrators (deceased or live suspects), mechanisms of injury, and other details of the incident. Details of NVDRS methods appear in Paulozzi *et al* and Azrael *et al*.^{19, 20}

METHODS

Homicide/suicide incidents were identified by scanning the NVDRS data sets for incidents involving at least one suicide (abstractor assigned manner of death = 1) and one homicide (abstractor assigned manner of death = 2). To be considered a homicide/suicide incident in the NVDRS, a suicide must occur within 24 hours of the homicide(s). Under this selection criterion, 65 incidents (involving 84 homicides) were identified for the seven states covered by the NVDRS for the year 2003 and 144 incidents (involving 164 homicides) were identified for the 13 states covered by the

NVDRS for the year 2004. For 2003, 12 of the 65 incidents involved multiple homicides (5 double homicides, 7 triple homicides). For 2004, 17 of the 144 incidents involved multiple homicides (15 double homicides, 1 triple homicide, 1 quadruple homicide).

At-risk population estimates based on US Census Bureau data²¹⁻²³ were used in the calculation of incidence rates. Recently released US Census Bureau data were also used to determine the metropolitan, micropolitan, or rural characterization of individual counties in the NVDRS reporting states. The rates by race/ethnicity, gender, and metropolitan status were age adjusted to the US standard population for the year 2000, using the direct method of standardization.²⁴

Analysis of incidence rates for rare occurrences or conditions often relies on the assumption that cases occur according to a homogeneous Poisson process.²⁵⁻²⁷ Because of the frequent clustering of victims associated with homicide/suicide incidents, the independence assumption inherent in this approach is violated. Therefore, an alternate method which compensates for such clustering was used to calculate confidence intervals.²⁸ The adjustment for clustering resulted in some confidence intervals, based on otherwise stable rate estimates, that are as much as 25% wider than those calculated without such adjustment.

These analyses consider incidents at both the victim ($n = 248$ homicides) and incident (or perpetrator) level ($n = 209$). Frequencies were calculated using the appropriate denominator for the selected level of analysis. Complete data were not available for every incident. The number of cases missing information on any measure is provided in the table.

Data on circumstance, relationship, and individual characteristics were often consolidated from multiple measures. Often a single element (for example, intimate partner violence) is abstracted from multiple sources. To ensure more complete representation, all available information was used to identify cases. For example, an incident can be identified as intimate partner violence related using information taken from child fatality reviews, medical examiner records, or police reports. In these analyses an incident is

Table 1 Characteristics of homicide victims in homicide/suicide incidents

	Homicide victims (2003)	Annual rate*	Rate ratio (95% CI)	Homicide victims (2004)	Annual rate*	Rate ratio (95% CI)
Age† (years)						
0-14	12	0.16**	0.56 (0.23 to 1.38)	18	0.13	0.47 (0.24 to 0.95)
15-24	14	0.29	0.98 (0.43 to 2.19)	24	0.25	0.93 (0.50 to 1.71)
25-34	14	0.29	0.98 (0.45 to 2.15)	28	0.30	1.09 (0.63 to 1.91)
35-44	18	0.31	1.06 (0.51, 2.22)	33	0.31	1.15 (0.67 to 1.97)
45-54	8	0.15††	0.52 (0.21 to 1.28)	27	0.27	1.01 (0.58 to 1.78)
55-64	4	0.11††	0.38 (0.13 to 1.10)	12	0.17	0.65 (0.33 to 1.28)
65+	13	0.29	(referent)	22	0.27	(referent)
Race/ethnicity‡						
American Indian	3	1.24††	5.97 (0.82 to 43.59)	-	-	-
Asian	2	0.11††	0.55 (0.13 to 2.29)	-	-	-
Non-Hispanic black	19	0.31	1.50 (0.78 to 2.86)	33	0.29	1.20 (0.77 to 1.88)
Hispanic	4	0.12††	0.56 (0.200 to 1.56)	11	0.24††	0.97 (0.44 to 2.12)
Non-Hispanic white	52	0.21	(referent)	119	0.24	(referent)
Gender						
Male	25	0.14	0.46 (0.27 to 0.78)	38	0.11	0.31 (0.22 to 0.45)
Female	58	0.31	(referent)	126	0.36	(referent)
Metropolitan status¶						
Metropolitan	70	0.22	0.57 (0.16 to 2.04)	124	0.22	0.61 (0.35 to 1.05)
Micropolitan	6	0.31††	0.82 (0.19 to 3.58)	20	0.31	0.88 (0.44 to 1.74)
Non-MSA	6	0.38††	(referent)	17	0.35	(referent)
Total	84	0.230	-	164	0.238	-

*Incidence rate per 100 000 person-years.

†The age of one victim in 2003 could not be determined from the available data.

‡The race/ethnicity data for nine victims in 2003 and one victim in 2004 were missing ($n = 4$) or corresponded to a group not appearing in this table ($n = 6$).

¶Metropolitan status could not be determined for two victims in 2003 and three victims in 2004.

**Rate has an estimated coefficient of variation >30% (indicating instability) after adjustment for clustering.

††Rate has an estimated coefficient of variation >30% (indicating instability) before and after adjustment for clustering.

MSA, metropolitan statistical area.

Table 2 Comparison of victim and perpetrator characteristics, 2003–04

	Victims, n = 248 (%)	Perpetrator, n = 209 (%)
Age* (years)		
0–14†	30 (12.1)	–
15–24‡	38 (15.4)	18 (8.6)
25–34	41 (16.5)	47 (22.5)
35–44	51 (20.6)	52 (24.9)
45–54	35 (14.2)	43 (20.6)
55–64	16 (6.5)	21 (10.1)
65+	35 (14.2)	28 (13.4)
Gender		
Male‡	63 (25.4)	192 (91.9)
Female	185 (74.6)	17 (8.1)
Race/ethnicity		
Non-Hispanic white	149 (60.1)	129 (61.7)
Non-Hispanic black	54 (21.8)	46 (22.0)
Asian	3 (1.2)	2 (0.96)
Native American	4 (1.6)	–
Other/unknown	22 (8.9)	12 (5.7)
Hispanic	16 (6.5)	20 (9.6)
Marital status§		
Married/cohabitating	86 (34.8)	64 (30.9)
Widowed‡	3 (1.2)	23 (11.1)
Divorced	22 (8.9)	23 (11.1)
Legally separated	14 (5.7)	13 (6.3)
Single, otherwise unknown‡	61 (24.7)	33 (15.9)
Unknown	61 (24.7)	51 (24.6)
Education¶		
< High school‡	21 (12.0)	25 (13.3)
High school‡	59 (33.7)	73 (38.8)
College	56 (32.0)	41 (21.8)
Professional/advanced	8 (4.6)	11 (5.9)
Unknown	31 (17.7)	38 (20.2)
Drugs/alcohol		
Alcohol/drugs present at time of death	53 (21.4)	61 (29.2)

*The age of two victims in 2003 could not be determined from the available data.

†Fisher's exact test of differences significant at 0.05 or greater.

‡Chi square test of differences significant at 0.05 or greater.

§The marital status of one victim and two perpetrators could not be determined from the data.

¶Educational status was only calculated for persons aged 25 years and over. Education data was missing for three victims and three perpetrators.

considered to have a given characteristic if it is indicated in any of the available data sources. Some NVDRS data lack the contextual information necessary for a complete consideration of differences. For example, the measure, "crisis in the past 2 weeks" is entered by the data abstractor when sufficient information indicating a personal crisis is available. Examples of possible crises included in the NVDRS coding manual include recent or impending arrest, relationship breakup, financial loss, and loss of social standing. Exacerbations of chronic conditions should not be coded as a crisis. Exact information on the nature of the crisis is unavailable in the data.

Tests of significance in the percentage of homicide victims and perpetrators who died by suicide were calculated using χ^2 tests of difference. Fisher's exact test was used when expected cell counts were less than 5.

RESULTS

Among all incidents included in the NVDRS data, homicide/suicide incidents are a relatively rare occurrence. In 2003, with seven states reporting, there were 65 homicide/suicide incidents including 84 homicide victims (homicide rate = 0.230/100 000 persons) and 65 suicides (suicide rate = 0.177/100 000 persons). In 2004, with 13 states participating, there were 144 homicide/suicide incidents, including 164 homicides (homicide rate = 0.238/100 000 persons) and 144 suicides (suicide rate = 0.205/100 000).

The NVDRS allows a calculation of the percentage of all homicides that are followed by suicide. During the two years examined, the proportion of female homicide perpetrators who subsequently died from suicide was consistently small

regardless of whether the homicide victim was an intimate (5.6% of 126) or non-intimate (3.4% of 294). Among male perpetrators, nearly one third (30.6%) of those who killed their intimate partner (n = 438) also ended their own lives, while only 1.7% of those who killed a non-intimate (n = 3459) also killed themselves.

A detailed comparison of age adjusted rates for homicide victims stratified by age, race/ethnicity, gender, and metropolitan status is presented in table 1. Overall, there were few significant differences among incident rates when the characteristics of homicide victims were considered. Young children and adolescents were significantly less likely than those over the age of 65 years to die from a homicide in a homicide/suicide incident in 2004. There were no other significant age differences among homicide victims in homicide/suicide incidents when compared to those over the age 65 in either year. There were also no significant racial or ethnic differences among homicide victims when compared to non-Hispanic white victims. There are significant differences in the age adjusted rate of homicide victims according to gender. In both 2003 and 2004, the rate of homicides among females was significantly higher than the rate for males; with the rate for females in both years being over twice the rate for males. While the majority of homicide victims lived in a metropolitan area, the age adjusted rate of victimization for both metropolitan and micropolitan area residents was not significantly different from those living in non-metropolitan statistical areas (MSAs).

Table 2 provides a comparison of characteristics of homicide victims and perpetrators for the years 2003 and 2004 combined. When compared to the percentage of victims

Table 3 Relationship and location characteristics of homicide victims, 2003–04

	Total, n = 248 (%)	IPV incidents, n = 146 (%)	Other incidents, n = 102 (%)
Relationship to perpetrator*			
Spouse, boyfriend, girlfriend†	112 (49.6)	102 (73.9)	10 (11.4)
Ex-spouse, ex-boyfriend, ex-girlfriend‡	19 (8.4)	19 (13.8)	–
Parent‡	7 (3.1)	1 (0.7)	6 (6.8)
Child, stepchild‡	31 (13.7)	4 (2.9)	27 (30.7)
Other family	7 (3.1)	3 (2.2)	4 (4.6)
Friend, roommate, acquaintance	8 (3.5)	3 (2.2)	5 (5.7)
Other known to victim‡	16 (7.1)	2 (1.5)	14 (15.9)
Stranger‡	4 (1.8)	–	4 (4.6)
Unknown relationship‡	22 (9.7)	4 (2.9)	18 (20.5)
Location			
Apartment/home	204 (82.3)	117 (80.2)	87 (85.3)
Outside of home	36 (14.5)	24 (16.4)	12 (11.8)
Unknown	8 (3.2)	5 (3.4)	3 (2.9)

*Relationship information was not available for 8 IPV-related and 14 other incidents.

†Chi square test of differences significant at 0.05 or greater.

‡Fisher's exact test of differences significant at 0.05 or greater.

in the same age category, children and young adults (<25 years of age) were significantly less likely to be perpetrators of homicide. Members of these age groups were also likely to be involved in multi-victim incidents. In 2003 and 2004 there were 29 multiple victim incidents. Seventy six percent of these incidents (n = 22) involved victims younger than 25 years of age and 48% (n = 14) involved at least one person younger than 15 years of age. In 2003 and 2004 there were 30 homicide victims younger than 15 years of age involved in 23 homicide/suicide incidents. In 17 (73.9%) of those incidents the perpetrator was identified as a parent.

A parent was identified as the suspect for five homicide/suicide incidents with 12 victims age 15 or younger in 2003; including two incidents with more than one victim under 15. In four (80.0%) of these incidents, including both multiple victim homicide/suicide incidents, the perpetrator was identified as the father. In 2004 there were 12 homicide/suicide incidents involving children under the age of 15 years; including three multiple victim incidents. The mother was identified as the perpetrator for eight (66.7%) of these incidents; including all three incidents involving more than one victim under the age 15.

The majority of victims and perpetrators involved in homicide/suicide incidents were non-Hispanic white. Slightly more than 20% of perpetrators and victims were identified as African American. Of note, the percentage of African Americans involved in homicide/suicide incidents is higher than their representation in participating states (approximately 16.7% in both years). There were no

significant racial or ethnic differences between homicide victims and perpetrators.

There were few marital status differences between perpetrators and homicide victims. Perpetrators were significantly more likely than victims to be widowed and victims were significantly more likely to be single. About one in three victims and perpetrators were married at the time of the incident.

Perpetrators of homicide/suicide incidents were significantly more likely than homicide victims to have a high school education or to have not completed high school at the time of the incident. Small percentages of perpetrators and victims had completed a graduate or professional degree. There were no significant differences in college or advanced degrees. Perpetrators of homicide/suicide were not significantly more likely than victims to test positive for either illegal drugs or alcohol during postmortem toxicological evaluations.

The distribution of homicide victims by their relationship to the perpetrator is shown in table 3. Homicide victims in intimate partner violence incidents were significantly more likely to have been killed by a current or ex-spouse, boyfriend, or girlfriend. For homicides involving other family members, the incident was significantly less likely to be related to intimate partner violence than to some other factor. Regardless of intimate partner violence status, the majority of homicides occurred within either the victim's or perpetrator's home. There were no significant differences in location when intimate partner violence related and other types of incidents were compared. "Mercy" killings, where one individual kills another to end his/her suffering, were rare. Mercy killings were identified using an abstractor coded variable based on available information including incident narratives. There were seven homicides determined to be mercy killings with 85.7% (n = 6) of victims over the age 55.

Some situational factors associated with a homicide/suicide incident included whether the incident was associated with jealousy (that is, a "lovers' triangle"), whether more than one victim was involved, and if the suicide occurred in the same location as the homicide. Only four (1.9%) homicide/suicide incidents in 2003 and 2004 were associated with jealousy and few involved more than one victim (13.9%). Most suicides (82.2%) following a homicide/suicide incident occurred in the same location as at least one of the homicides.

As shown in table 4, specific situational factors associated with suicide were recent legal problems (25.3%), a job or financial problem (9.3%), or some other relationship problem not related to IPV (8.8%). While only 7.2% were known to have ever been treated for mental health problems, 11% had

Table 4 Key characteristics of suicide following homicide, 2003–04

Characteristic	Number of incidents, n = 209 (%)
Left suicide note	30 (15.5%)
History of previous suicide attempts	5 (2.6%)
Circumstance associated with the suicide	
Legal problems	49 (25.3%)
Job or financial problem	18 (9.3%)
Other relationship problem (not IPV)	17 (8.8%)
Physical health problem	12 (6.2%)
Mental illness	
Current mental illness	23 (11.0)
History of mental illness	15 (7.2)
Current depression	18 (8.6)
Drugs/alcohol	
History of drug or alcohol abuse or dependency	19 (9.1)

*Circumstance information was not available for 15 suicides.

Table 5 Weapon type for homicides and suicides

Weapon used to inflict injury	Homicide n = 248 (%)	Suicide n = 209 (%)	All victims n = 457 (%)
Firearm	205 (82.7)	168 (80.4)	373 (81.6)
Sharp instrument	15 (6.0)	11 (5.3)	26 (5.7)
Blunt instrument	9 (3.6)	–	9 (2.0)
Poisoning	4 (1.6)	4 (1.9)	8 (1.8)
Hanging/strangling/suffocation	11 (4.4)	6 (2.9)	17 (3.7)
Personal weapons	1 (0.4)	–	1 (0.2)
Falls	–	3 (1.4)	3 (0.7)
Fire/burn	2 (0.8)	1 (0.5)	3 (0.7)
Vehicle	–	2 (1.0)	2 (0.4)
Unknown	1 (0.4)	–	1 (0.2)

evidence of a current mental illness and 8.6% were considered depressed at the time of the incident. Nearly 1 in 10 perpetrators (9.1%) had evidence of a drug or alcohol abuse problem. In a minority of cases, the individual had a history of previous suicide attempts (2.6%) and 30 (15.5%) of those who died by suicide left a suicide note suggesting premeditation.

Table 5 shows a comparison of weapons used in homicides and suicides. Firearms were used in a majority of homicide/suicide incidents for both homicides (82.7%) and suicides (80.4%). The next most common weapon used in both homicides and suicides were sharp instruments (5.7%). Among suicides, the head, face, or neck was the most frequent (90.6%) location of the wound and most suicides had only one wound location (97.6%). While the head area was also the most common location among homicide victims (72.1%), a much greater percentage of victims had wounds in multiple locations (22.2%).

DISCUSSION

The data on homicide/suicide incidents collected in the first two years of the NVDRS provide support for the patterns observed in earlier studies of populations in smaller geographic areas. Specifically, the findings that most homicide victims in homicide/suicide incidents are female and most homicide perpetrators are male, that over half (58%) of the victims are current or former intimate partners of the perpetrator, that less than 5% of homicide/suicide incidents occur between strangers, that most homicide/suicide incidents (82.3%) occur in a residence, and that most deaths (81.6%) result from a gunshot wound are all consistent with past research on homicide/suicide.^{3 14 15} As is the case in other studies, the majority of incidents are attributed to IPV, a substantial proportion include the homicide of a child, and a small proportion can be attributed to “mercy” killings.

The finding that 30.6% of all male perpetrators of intimate partner homicide ultimately ended their own lives highlights the importance of both IPV and suicidal ideation in understanding the factors contributing to risk for homicide/suicide. The circumstance information available in the NVDRS provides insights into the nature of the homicide/suicide incidents and contributes to the growing body of literature on potential risk factors for homicide/suicide. The fact that 11% of perpetrators had documented mental illness at the time of the incident and 29% tested positive for drugs or alcohol is consistent with past research documenting the importance of mental health and substance abuse disorders in predicting risk for suicidal behavior and violence.^{3 5} Also, the finding that one in four perpetrators had experienced legal problems, nearly one in 10 had experienced job or financial problems, and approximately one in 16 had experienced physical health problems that were associated with their suicide underscores the importance of situational factors for exacerbating risk. Those who work with

victims or perpetrators of IPV, suicidal patients, and those caring for seriously ill family members should be alert for situational stressors that may contribute to the possibility of violence or suicide. The current results, combined with those from other studies, also underscore the importance of prevention programs and policies that increase the availability of treatment for mental health and substance abuse problems, the accessibility of shelters for victims of IPV, and the enforcement of existing domestic violence laws.¹⁰

This manuscript provides basic descriptive information about the prevalence of homicide/suicide and the characteristics of the people involved. Additional research is needed to understand how the demographic factors and experiences of the people involved in homicide/suicide incidents differ from those involved in homicide-only or suicide-only incidents. A better understanding of the similarities and differences in these incidents can help guide the development of prevention programs and policies.

There are several limitations that should be considered when making conclusions from these results. First, although the use of multiple data sources enhances the accuracy of the data in the NVDRS, it is still possible that some homicide/suicide incidents were not identified in the system. Thus, the rates calculated are likely an underestimate of the true prevalence. Second, the operationalization of homicide/suicide used in the current study does not include incidents where law enforcement officers used lethal force against a homicide offender because of the offender’s actions (for example, raising a firearm at an officer), although some have suggested that such incidents could be included as homicide/suicide.²⁸ Third, the data on the behavioral and mental health history of perpetrators are subject to error from both a lack of information routinely reported in official records and the absence of detailed individual histories obtained during case investigations. When detailed histories are available the source of information may be a family member or close friend and are of unknown accuracy. While it is likely that reports of the presence of behaviors or symptoms are accurate, the absence of this information does not necessarily mean that the behaviors or symptoms did not occur.

The consistency of the NVDRS results with those from past studies on homicide/suicide and the comprehensive information available about the characteristics of all the people involved in these incidents highlight the promise of the NVDRS for studying homicide/suicide incidents. Previous efforts to describe the epidemiology of homicide/suicide incidents have frequently relied on manual record linkages³ or systematic reviews of newspaper accounts.¹⁶ The NVDRS allows for easy identification of homicide/suicide incidents by keeping the homicide and suicide linked within an incident. As more years of data become available and the number of states included in the NVDRS system continues to increase, this system will provide an efficient mechanism for monitoring temporal changes in homicide/suicide prevalence, describing

Key points

- Homicide followed by suicide (homicide/suicide) is a relatively rare event, defined here as one person killing one or more others and then taking his/her own life within 24 hours.
- Most perpetrators of homicide/suicide events were male (92%); most victims were the perpetrator's current or former intimate partner (58%).
- Our results suggest the appropriateness of both targeted prevention efforts for victims and perpetrators of intimate partner violence and maintenance of awareness of increased homicide/suicide risk following situational stressors.

the characteristics of homicide/suicide victims, perpetrators, and incidents, comparing rates across states, and evaluating the impact of prevention programs and policies.

In conclusion, although homicide/suicide is a rare incident, each incident results in at least two deaths and frequently includes the death of a child. While other countries have national surveillance systems that capture homicide/suicide incidents, the US does not.²⁹ Researchers have called for the development of a national system in the US to permit prospective monitoring of the prevalence and epidemiology of homicide/suicide.^{4, 30–31} The NVDRS has the potential to develop into a system that can be used for these purposes.

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